CLAIMS

1. A solar cell comprising a silicon substrate for a solar cell, formed by allowing a high-purity polycrystalline silicon layer to grow on a surface of a base sliced from a polycrystalline silicon ingot which is obtained by melting metal-grade silicon and solidifying the silicon in one direction, wherein a layer having a non-doped amorphous silicon phase and a microcrystalline silicon phase mixed together is stacked on the high-purity polycrystalline silicon layer.

2. A solar cell according to claim 1, wherein a thickness of the layer having the non-doped amorphous silicon phase and the microcrystalline silicon phase mixed together ranges from 1 nm to 15 nm.

3. A solar cell according to claim 1 or 2, wherein a ratio of the amorphous silicon phase and the microcrystalline silicon phase in the layer having the non-doped amorphous silicon phase and the microcrystalline silicon phase mixed together ranges from 1:1 to 10:1.

4. A solar cell comprising a crystalline silicon substrate or a crystalline silicon layer, a layer having an amorphous silicon phase and a microcrystalline silicon phase mixed together, and a polycrystalline silicon layer grown with the microcrystalline silicon phase as a seed, which are stacked in mentioned order.